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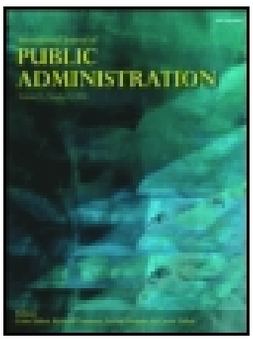

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What Makes a Key Player in Interorganizational Social Policy Networks? The Case of Uruguay

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ABSTRACT

Networks of organizations involved in public policy implementation require strong interaction, concerted action and high degrees of collaboration to be effective. However, little is known about how different types of organizations involved in implementation of multi-sectoral social policies interact in these networks. In this article the relationship between organizational characteristics and network position is explored, as well as how the intensity of collaborations can also determine organizations' involvement in networks. The nature of funding (public/private) and the remit of activity of organizations are found to determine their influence and importance in social policy networks. Furthermore, the network position of the organizations also depends on the level of intensity of their interactions. These results can guide public administrators when developing and promoting networks to involve a particular type of actor and also policymakers as to which types of ties are more aligned with the implementation of a particular policy.

KEYWORDS

Policy networks; social network analysis; social policy; Uruguay; Latin-America

Introduction

Several decades ago, the resurgence of conservative governments and third-party movements triggered a debate on public administration management. This "New Public Management" (NPM) era was characterized by the division of labor between public and private sector and the privatization and marketization of activities traditionally carried out by the public sector (Hood, 1991). However, the NPM system was unable to face several issues such as increasing complexity of services, mission expansion in public management, government de-legitimization, growing demands of governance by citizens and new needs posed by the so-called "wicked problems", i.e. non-decomposable problems that require the intervention of multiple actors across different sectors (Lecy, Mergel, & Schmitz, 2014; O'Toole, 1997).

In response to the ineffectiveness of NPM to tackle these issues, networks have come to play a central role in policy-making. These networks are based on concerted action and co-production for policy implementation (Krueathep, Riccucci, & Suwanmala, 2010). Inter-sectoral diverse networks allow governments to leverage expertise beyond the public sector (Isett, Mergel, LeRoux, Mischen, & Rethemeyer, 2011) and are an alternative when markets and bureaucracies fail (Ostrom, 1990). As such, networks are strategically relevant to social policy design and implementation (Agranoff, 2006) and have attracted increasing attention over the past few decades (Hu, Khosa, & Kapucu, 2016). Research has focused on better understanding individual cooperation links among organizations and, more recently, on describing the mechanisms by which a group of public-private organizations integrate their activities to implement public policies (Isett & Provan, 2005).

Social policy networks consisting of diverse and independent organizations are a popular instrument to implement policy at community level. Whilst in some cases public agencies directly form the networks, frequently private-lead organizations in the territory are funded to create those networks (Graddy & Chen, 2006). The latter model has implications on the type and amount of resources that organizations exchange in the network (Hatmaker & Rethemeyer, 2008). However, little is known about the way in which different types of organizations interact in these networks and if these interactions depend on the nature of their funding (public/private) and/or their remit of activity. These characteristics have implications on the type of resources organizations might depend on and, therefore, on network participation. The type of the links established in these interorganizational arrangements varies in terms of the resources that organizations

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depend on to address power imbalances (Drees & Heugens, 2013). Policy network partners can have links at different levels of intensity, ranging from low (referral relationships) to high (project collaboration), which has implications on network efficiency (Graddy & Chen, 2006). However, the relevance of analyzing different types of interorganizational links has been neglected in the literature (Provan & Huang, 2012).

This article aims to address the following research questions:

RQ_1: Do publicly and privately funded organizations play similar roles in social policy networks?
RQ_2: Does the primary activity of organizations determine their involvement in networks?
RQ_3: Are there significant variations in organizations' involvement depending on the type of link considered?

In this article, links among social policy organizations (N = 668) located in deprived neighborhoods across Uruguay are examined. Its main contribution to the literature is to provide empirical evidence regarding intrinsic characteristics of different types of organizations that determine their levels of involvement in social policy networks. Describing the position and influence of organizations in networks mobilized by publicly-funded agencies might help to focus public efforts on particular social policy actors that might be better suited to implement specific types of social policies. Results are also relevant to inform the participation of individual organizations in social policy networks, given the costs of networking (Andrews, Boyne, Meier, O'Toole, & Walker, 2011; Sørensen & Torfing, 2009).

In the next section, the theoretical underpinnings of the organizational partnerships' drivers are presented. In section three, the data and methodology are described. Results are presented and discussed in section four, and the final section includes the conclusions highlighting implications for social policy implementation.

Theoretical background

"Collaborative networks" (Isett et al., 2011; Kapucu, Hu, & Khosa, 2014) have become a popular strategy for social policy implementation. In these networks, actors interact to jointly deliver a good or service that cannot be offered by a single organization (Isett & Provan, 2005). Although collaborative networks pursue a common goal, not all organizations get involved in the same way. Organizations interact in networks aiming to promote their goals and based on their own attributes (Agranoff, 2007). Thus, neither all organizations contribute equally to the formation of such networks nor they participate equally from their links. For example, while some actors may fulfill specialized roles by focusing on their scope of activity, others can play network managing roles, which can range from mere facilitation to orchestration of relationships (Rethemeyer, 2005). Analyzing how organizations get involved in collaborative networks is crucial to understand coordination processes amongst them (Isett et al., 2011).

In order to identify and examine different ways of getting involved in collaborative networks, this article grounds on both social network analysis (SNA) and resource dependency theory (RDT). Research on SNA associates the position occupied by actors with the role they play in social networks. In particular, two network properties have been profusely analyzed in the literature: centrality and embeddedness.

Being a central node in the network, with a large number of links and good connections to the rest of the actors, is associated with being influential and prestigious (Faust & Wasserman, 1992; Moreno, 1934), with ease to spread ideas (Banerjee, Chandrasekhar, Duflo, & Jackson, 2013), good access to resources and capacity to intermediate and "orchestrate" actions carried out by other actors (Freeman, 1978). On the other hand, being embedded in a densely connected cluster implies belonging to a group of actors with common rules, mutual control and trust, which maintain periodic interactions and reciprocal information flows among them (Granovetter, 1985; Uzzi & Spiro, 2005).

Theoretically, RDT has underpinned most of the academic literature exploring the interaction decisions of organizations as a response to their need for external resources (Drees & Heugens, 2013). It has been argued that organizations use alliances strategically to reduce their exposure to uncertainty, risk, and opportunism (Starkey, Barnatt, & Tempest, 2000) and that collaboration is directly related to increased resources and legitimacy of organizations (Drees & Heugens, 2013; Stuart, 2000). Popular organizations have characteristics that make them more desirable partners than others, with higher networking opportunities and more central positions in the networks (Berardo & Scholz, 2010). In turn, network embeddedness can boost performance (Schalk, Torenvlied, & Allen, 2010), which is why research in this area has frequently focused on exploring the effectiveness of policy-implementation networks (Lecy et al., 2014). However, this paper focuses on how intrinsic characteristics of organizations might determine their position and

role played in collaborative networks. In addition, it aims to analyze if these characteristics change when considering different types of interorganizational interactions. Based on SNA and RDT, hypotheses are generated to test if organizational characteristics such as resource dependency and remit of activity are associated with position, importance and influence in collaborative networks.

Economic resource dependency

Social policy networks require the participation of both public agencies and non-state actors (Krueathep et al., 2010). To increase policy effectiveness at a local level, public agencies have frequently funded well-connected private organizations in the community as lead-organizations to mobilize the network (Graddy & Chen, 2006). This resource interdependency will affect differently the decision to collaborate of the lead-organizations in the networks and increase their motivation (Foster & Meinhard, 2002). Similarly, private independent organizations can frequently rely almost completely on public funding contracts adapting their strategic decision-making and organizational goals (Foster & Meinhard, 2002). These organizations will have higher incentives than privately-funded organizations to network in order to access additional funds or legitimacy. Funding is critical to the exercise of power and influence within a policy network (Hatmaker & Rethemeyer, 2008). Studies on innovation networks have analyzed the network position of public and private actors and found differences in the position they occupy and their influence (Graf & Henning, 2009). Therefore, the idea that the sources of funding of organizations can determine their network positions is the base for the two first hypotheses of this study:

H_1: Lead-organizations of social policy networks at community-level will have more central and influential positions in a network.

H_2: Organizations that operate with a majority of private funding are less likely to occupy central positions in social policy networks.

Remit of activity

Network research in public administration focusing on individual properties of the nodes has generally explored interactions among organizations operating in particular areas of expertise such as health delivery (Provan & Milward, 2001) or catastrophic disaster response (Kapucu, 2006; Siciliano & Wukich, 2017). Social policy networks involve more heterogeneous actors pursuing different aims. The diversity and unpredictability of stakeholder demands can determine the extent of networking (Andrews et al., 2011). Organizations with broader, multidimensional, objectives face more capacity constraints due to the complexity and variety of the social services they need to offer. Cooperating allows these organizations to supply a wider range of products and services (Dyer & Singh, 1998) and enables them to successfully fulfil their broader mandates. Organizations with more ambiguous aims, such as those in "social services", might have a higher propensity to collaborate than those with narrower mandates, such as healthcare providers. Therefore:

H_3: Organizations with multidimensional aims are more likely to have more central and influential network positions than organizations with narrower mandates.

Subnetworks

Organizations' mutual dependencies also influence the type of links that organizations engage in (Berardo & Scholz, 2010). Organizations can develop links at different levels of intensity, which range from superficial to intense, depending on their needs (Konrad, 1996). To portray the importance of the different types of links on the attributes and better understand the complexity of social policy networks, data on three subnetworks underlying the global network (information diffusion, infrastructure sharing, and collaborative projects) are examined. Sharing information is the least intense networking level, where most relationships are informal (Hatmaker & Rethemeyer, 2008). However, the importance of information exchange in the effectiveness of collaborative networks has been highlighted in the literature, for example when responding to catastrophic disasters (Kapucu & Wart, 2006), and is relevant as the main type of link promoted by the social program focus of this study. The next type of link is sharing infrastructures because even if it is a form of collaborative action, organizations usually pursue different goals. Finally, the highest level of networking is established in collaborative projects where the organizations remain autonomous but pursue similar goals, and relationships are formal and structured. Evidence suggests that 'consequential' networks that involve resource-exchange and joint decision-making among

the partners are more effective (Graddy & Chen, 2006). It can be argued that the determinants of the network position and organizational influence are likely to vary depending on the type of links. For example, the relative importance of social policy promotion organizations in a network is likely to be high for information sharing for their need to refer clients to other more focused organizations (Provan, 1984) but less so for sharing infrastructures or collaborative projects. Therefore:

H_4: The determinants of network position and influence of an organization in a network are likely to vary depending on the type of the link considered.

Data and methodology

Context

In this study, a social network dataset collected as part of a larger study to evaluate the effectiveness of a national public program in Uruguay named SOCAT (Spanish acronym for Guidance, Advice and Local Coordination Service) is used. SOCAT, which began in 2005, aims to combat at the local level high poverty and deprivation rates, urban informality and residential segregation. Its main objective is to consolidate the local capacity of stakeholders to strengthen social integration by developing local networks of public and private multi-sectoral organizations operating in the communities. These networks are expected to enhance the effectiveness of national social policies, such as education and healthcare, at the local level. They are intended to foster dialogue and exchange across organizations to, not only collectively identify the main challenges in the area, but also promote the implementation of innovative local community actions to address them.

This program involves all social policy actors operating in a neighborhood. The social policy networks consist of multiple public and private organizations providing services in the areas of education, healthcare, social care, culture, sports, social policy promotion, and gender equality and gender-based violence. The networks are mobilized by SOCAT offices, which are Civil Society Organizations (CSOs) with contractual agreements with the Uruguayan Ministry of Social Development (MIDES). The Ministry's experience in dealing with local organizations in the territories of interest shaped its choice of lead-CSOs for policy implementation.

The data: constructing networks

The dataset used for this study was commissioned by MIDES to evaluate the performance of the SOCAT program. Data collection was funded by the Inter-American Development Bank and conducted from May to November 2014. The program is implemented at a national level but was only evaluated for 18 high priority neighborhoods selected by MIDES according to specific poverty and deprivation criteria. Socio-economic characteristics of these neighborhoods are shown in Table 1.

In each neighborhood, two rounds of data collection were conducted. Firstly, eighteen interviews were conducted with all lead-organizations in each high-priority neighborhood. Enumerators used a free-recall method asking organizations to nominate all their existing ties. Secondly, a snowballing approach was used aiming to

Table 1. Characteristics of selected geographical areas.

Name of the area	Number of households	Unemployment (%)	Unsatisfied basic needs (% of people with at least one)
42 viviendas	2,674	7.30%	20.90%
Barrio Conciliación	5,129	10.00%	23.40%
Barrios Blancos	3,884	10.40%	22.90%
Cañada Zamora	2,520	8.60%	21.90%
Casabó, Bajo Valencia	1,726	9.50%	19.40%
Casavalle	1,741	11.70%	31.90%
Cerro Pelado	3,053	5.90%	19.40%
Colonia y alrededores	1,947	5.40%	32.50%
La Paz	1,815	9.10%	18.90%
Los Bulevares	2,102	8.10%	23.80%
Nuevo Colón, Abayubá	NA	NA	NA
Paysandú	1,815	6.20%	33.80%
Penino	1,101	8.20%	31.70%
Piedras Blancas, Punta de Rieles-N, Jardines del Hipódromo	8,208	8.80%	26.40%
Rivera Chico	5,660	7.40%	15.60%
Salto	2,840	5.70%	26.60%
San Miguel	2,174	8.30%	20.70%
Villa García	2,908	7.60%	23.00%
Country Average	-	*6.30%*	*14.50%*

Source: INE (2011).

interview all the organizations mentioned by the SOCAT organizations interviewed in the first round. In some neighborhoods – Casabó, Bajo Valencia, Barros Blancos, Cerro Pelado and 42 viviendas–, there was a third round of snowballing data collection and no new and relevant organizations were identified. Consequently, for practical and financial reasons, data collection in the other neighborhoods stopped after two rounds. Given the relative importance of the interviewed organizations in the policy implementation networks, the type of network data used – i.e. a link between two organizations exists if at least one of them reports it – and the high proportion of interviewed organizations, the dataset allows inferring accurate network estimates without full population coverage (Smith & Moody, 2013; Smith, Moody, & Morgan, 2017).

Face-to-face semi-structured interviews were conducted with managing directors of 293 organizations in charge of public policy implementation. These interviews explored the links established by organizations with other social policy actors, as well as the objectives of these interactions. Three types of undirected links are considered: information diffusion, sharing infrastructures, and project collaboration. Firstly, a link between two organizations sharing information is established when an organization declares requesting information from others to, for instance, refer potential service users. Secondly, in the case of infrastructure sharing, a link is established when an organization declares to share with another social policy actor any type of infrastructure or equipment required for undertaking its regular activities. For example, sports organizations frequently share their premises with education institutions. Finally, for project collaboration, a link is established between two organizations when one declares to collaborate with another in at least one project such as, for example, a jointly organized event to gain visibility in the neighborhood. These interactions allow constructing three subnetworks for each of the 18 geographical areas represented. Finally, one overall-cooperation network was constructed for each neighborhood, aggregating the three types of links. The questionnaire used is included in Appendix 1.

The final dataset contains an inferred network of 669 social policy implementers interacting in 18 territorial networks. For each of these organizations, the database contains information on their funding source, if they are a SOCAT lead-organization, and on their area of activity. Finally, information also exists on type of cross-organizational link to explore the neighborhood's subnetworks. The elaboration and analysis of these networks was conducted using igraph package for R.

Social network analysis

Social network analysis is used to study the networks in the dataset. To measure the participation of each organization in the networks, the article employs node-level indicators analyzing their relative position, with a focus on centrality and embeddedness. Centrality is the extent to which a node is active in the network by establishing connections with other actors (Wasserman & Faust, 1994). Previous studies have demonstrated the relevance of centrality in social networks and its pertinence to the identification of key actors (see, for example, Ballester, Calvó-Armengol, & Zenou, 2006; Fang et al., 2015). Similarly, centrality has been associated in the literature with an increase in performance of organizations (Meier & O'Toole, 2003). Central organizations in the social policy context are those that are better connected to the other social policy actors with more frequent collaborations, obtaining and diffusing valuable information, and/or sharing infrastructure with others. Furthermore, organizations with high centrality may have greater influence over other actors in the networks. The measure used is degree centrality, defined as the number of links connecting the node. Higher degree measures indicate that organizations have many connections to other organizations (Wasserman & Faust, 1994).

Clustering reflects the level of social embeddedness in one (or a few) groups of highly interconnected organizations. The clustering coefficient used measures the probability that the neighbors of a node are connected among them (Watts & Strogatz, 1998). Organizations with high clustering coefficients are those which have direct contacts that are also connected with each other. The literature on networks has revealed the importance of clustering for different relational aspects such as enabling and maintaining trust between actors as well as facilitating the diffusion of complex information (Schilling & Phelps, 2007; Uzzi & Spiro, 2005). In our study, organizations with higher clustering coefficients may also have higher trust levels, as well as better access to more reliable information. However, as social policy actors with higher clustering participate in networks in which most of their direct contacts are already connected, their participation could be seen as less strategic because the contacts in the network can reach each other without a need for such intermediation.

Finally, coreness, a third network indicator is calculated. This index accounts simultaneously for both centrality and

embeddedness of nodes as it measures the level of interconnection inside the clusters or subgroups to which an organization belongs. More concisely, it identifies all the subgroups to which an organization is linked, subsequently measuring the highest level of interaction found in the best-connected subgroup. In this study, the coreness of a node is k if it belongs to the k-core but not to the $(k + 1)$-core (Seidman, 1983). Organizations with high levels of coreness are embedded in groups of central actors that are also well-connected among them. These clusters of organizations can be considered the core of the network, as opposed to the more disconnected periphery (Borgatti & Everett, 2000). Being embedded in a cohesive subgroup within a network has been found to positively affect an organizations' performance (Provan & Sebastian, 1998, Schalk et al., 2010). In terms of social policy networks, organizations with high coreness will belong to large and influential groups in which members tend to get involved in each other's practices or day-to-day activities.

Regression analysis

To understand organizational intrinsic characteristics that determine their relative importance in the networks, Ordinary Least Squares (OLS) regressions were estimated. Using Stata, the network outcomes (degree, clustering and coreness) were modeled as a function of different attributes of social policy organizations that can potentially determine their network position.

First, a binary variable was included to indicate whether the majority of the organizations' funding is public or private. This categorization is an attempt to simplify the increasing heterogeneity of organizations implementing public policy and, therefore, hybrid organizations are categorized based on their identities and roles in public services (Denis, Ferlie, & Van Gestel, 2015). The "public sector organizations" category contains both public institutions, directly funded and managed by the national government, and private CSOs operating under contractual agreements with the public administration in order to develop programs designed and funded by the public sector. On the other hand, private organizations with agendas and funding sources that are mostly independent from those of the public administration were included under the category "private sector organizations".

Secondly, a binary variable was used for those organizations that are SOCAT branches or lead-organizations. Some of these organizations are private institutions operating with a formal agreement with MIDES to implement the programs of the Ministry. These organizations, responsible for mobilizing and promoting these policy implementation networks, are expected to play a key role. Additionally, they have a special incentive to report all their links with other organizations so this variable also controls for this potential bias.

Finally, six different binary variables are included to control for the remit of the organization. These mutually exclusive categories are education, health, social care, social policy promotion, culture and sports, and gender and gender-based violence.

The size of the networks (i.e. the number of nodes) varies across the 18 neighborhoods. To compare the results obtained in networks of different sizes, the degree measure has been normalized by dividing it by its maximum possible value. For coreness and clustering, the regressions included 17 indicators to account for each different neighborhood and address the fact that each organization belonged to a separate network.

These models show which of the organizational characteristics considered might be correlated with the position of the organizations in the network and, thus, their participation and relative importance in the implementation of social policies.

Results

Analysis of the social policy networks

Network indicators for the overall network (Appendix 2) show higher average values in information-sharing and project-collaboration networks indicating that these two interactions are more frequent and clustered. Furthermore, higher standard deviations for degree and coreness confirm their more concentrated structure relative to infrastructure-sharing networks. The network maps are shown in Figure 1.

The descriptive statistics for the explanatory variables analyzed in the models (Appendix 3) show that only 13 percent of the organizations in the networks have a majority of private funding and just 7 percent are SOCAT lead-organizations. Over one quarter of the sample (28%) reports providing formal and/or informal education services; this is the most frequent activity undertaken by organizations in the sample. Organizations dedicated to social policy promotion were also popular representing 20 percent of the sample. Over 10 percent of the organizations are healthcare providers, followed by social care providers (9%), culture or sports organizations (3%) and gender equality or gender-based violence prevention

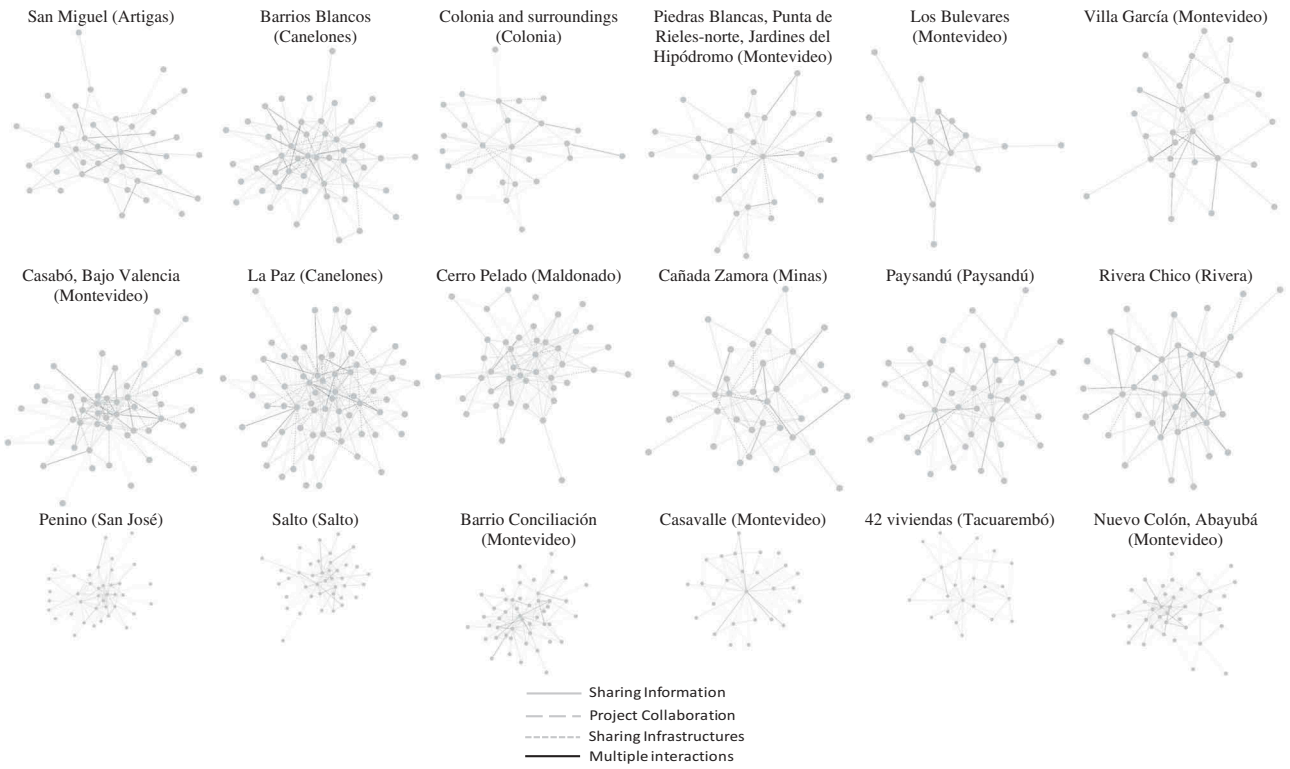

Figure 1. Social policy networks in Uruguay.

organizations (3%). Nearly one-fifth of the organizations were categorized as 'others', undertaking a range of activities that cannot be included in any of the previous sectors.

Determinants of the role of organizations in the networks

The results of the analysis are presented in Tables 2 and 3. Table 2 shows the organizational characteristics that determine relative importance in the overall network. The determinants of a more central network position and, therefore, the likelihood of establishing a greater number of links is shown under degree (column 1). Being a lead-organization (SOCAT) is significantly and positively associated with having a central position in the network. The coefficient for degree (0.549) is significant at 1% and the highest in magnitude. This is in line with hypothesis H1, not only because these organizations were expected to have higher interactions as direct policy implementers but also because these organizations are incentivized to report all the actors in their network, given that fostering collaboration is their primary objective. Depending on their mission, other types of organizations that are positively and significantly associated with more central positions in the network are: organizations in the education sector, those providing health and social care services, and those in charge of social policy promotion. These types of organizations seem to be more cooperative and have higher involvement and influence.

The organizational characteristics that determine clustering levels are also shown in Table 2 (column 3). Firstly, findings suggest that privately funded organizations are less likely to be part of clusters than public organizations. This can be explained by the more independent nature of their activities and funding, which can also make forming part of clustered groups less feasible. Secondly, being a lead-organization is also significantly and negatively (−0.318) associated with clustering. The mission of lead-organizations is to promote collaboration across organizations that are diverse and not linked; therefore, better results depend on expanding and reaching out to organizations that are not already interacting among them. Finally, organizations operating in the areas of education, health and social policy promotion also appear to have significant and negative associations with the clustering measure, relative to the base category 'others'. Such results suggest that these types of organizations interact with a variety of social policy actors that are not already linked.

The determinants of coreness are shown in Table 2 (column 4). Being a lead-organization (SOCAT) is significantly and positively associated with being at highly-connected cores of the networks. This, again, corroborates H1 and is related to their mission and social policy objectives. Education, health, social care

Table 2. OLS estimation of the organizational determinants of network position.

Dependent variable: VARIABLES†	Degree (1) ‡	Clustering (2)	Coreness (3)
Private	0.009	−0.134***	0.160
	(0.023)	(0.044)	(0.456)
SOCAT	0.549***	−0.318***	3.675***
	(0.084)	(0.049)	(0.637)
Education	0.058***	−0.157***	1.468***
	(0.021)	(0.047)	(0.425)
Health	0.051*	−0.106*	0.856*
	(0.028)	(0.055)	(0.465)
Social care	0.096***	−0.077	1.773***
	(0.033)	(0.063)	(0.523)
Culture/Sports	−0.023	−0.020	−0.101
	(0.033)	(0.083)	(0.665)
Gender/Violence	−0.030	−0.051	−0.320
	(0.032)	(0.093)	(0.685)
Social policy §	0.078***	−0.095**	1.563***
	(0.025)	(0.048)	(0.434)
Constant	0.155***	0.418***	4.156***
	(0.017)	(0.063)	(0.541)
Territorial indicators	No	Yes	Yes
Observations	669	669	669
R^2	0.239	0.110	0.168
Number of territories¶	-	18	18

†Robust standard errors are in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.
‡Degree has been normalized to account for network size. Regressions for (2) clustering coefficient, and (3) coreness include 18 territory indicators that have not been reported in the Table.
§'Others' is the base category for sector of the organization.
¶San Miguel (Artigas) is the baseline territory.

Table 3. OLS estimation of the organizational determinants of network position by type of link.

	Information (low collaboration)			Infrastructures (medium collaboration)			Projects (high collaboration)		
Dependent variable: VARIABLES	Degree (1)	Clustering (2)	Coreness (3)	Degree (1)	Clustering (2)	Coreness (3)	Degree (1)	Clustering (2)	Coreness (3)
Private	−0.028**	−0.153***	−0.720***	0.016**	0.055*	0.419**	0.021**	0.027	0.550**
	(0.011)	(0.041)	(0.184)	(0.008)	(0.032)	(0.172)	(0.010)	(0.042)	(0.231)
SOCAT	0.180***	−0.128***	1.333***	0.134***	0.037	1.501***	0.234***	0.023	1.900***
	(0.033)	(0.048)	(0.250)	(0.024)	(0.026)	(0.268)	(0.039)	(0.045)	(0.309)
Education	0.010	−0.000	0.320*	0.015***	0.038	0.500***	0.033***	0.097**	0.936***
	(0.010)	(0.049)	(0.171)	(0.006)	(0.023)	(0.155)	(0.011)	(0.038)	(0.212)
Health	0.014	−0.007	0.327*	0.023***	0.044	0.441**	0.014	0.028	0.495*
	(0.012)	(0.053)	(0.186)	(0.009)	(0.028)	(0.179)	(0.013)	(0.044)	(0.255)
Social care	0.057***	0.001	0.736***	0.016***	−0.003	0.492**	0.022	0.105**	0.838***
	(0.018)	(0.061)	(0.222)	(0.009)	(0.022)	(0.198)	(0.014)	(0.053)	(0.258)
Culture/Sports	−0.024**	−0.133**	−0.635**	0.018	0.028	0.635**	−0.017	0.151*	−0.158
	(0.012)	(0.061)	(0.301)	(0.014)	(0.047)	(0.298)	(0.015)	(0.092)	(0.361)
Gender/Violence	−0.006	0.010	0.243	−0.011	0.006	−0.105	−0.012	0.006	−0.229
	(0.014)	(0.096)	(0.299)	(0.010)	(0.042)	(0.291)	(0.016)	(0.085)	(0.385)
Social policy promotion	0.048***	0.019	0.666***	0.015**	0.025	0.477***	0.014	0.024	0.458**
	(0.013)	(0.048)	(0.178)	(0.007)	(0.025)	(0.162)	(0.011)	(0.037)	(0.216)
Constant	0.071***	0.254***	1.431***	0.028***	0.036	1.159***	0.055***	0.128**	1.552***
	(0.008)	(0.063)	(0.212)	(0.005)	(0.035)	(0.248)	(0.008)	(0.056)	(0.294)
Includes territory indicators	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Observations	669	669	669	669	669	669	669	669	669
R^2	0.179	0.082	0.192	0.164	0.079	0.123	0.213	0.098	0.218
Number of territories	-	18	18	-	18	18	-	18	18

† Robust standard errors are in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. ‡ All measures defined identically to Table 6.

and social policy promotion sectors are all significantly and positively associated with coreness, when compared to the base category 'others'. Organizations devoted to these activities usually belong to larger groups of highly inter-connected organizations. This is consistent with the results for degree.

These results suggest that organizational characteristics determine two types of involvement in this global network. The first type of network positioning includes the strategic players and is determined by organizations with high centrality and coreness but low clustering. These are found to be organizations operating in the name of the Ministry (SOCAT) and others working on education, health, social care and social policy. These are key organizations in the network, which are very well connected, and act as intermediaries in the relations among other actors. Except for social care, their contacts are not restricted to a specific cluster of organizations. This is what was expected (H3),

except for the health sector. The second type of involvement in the network can be described as more marginal, for example as was hypothesized in H2 private organizations seem to play less relevant roles, presenting inconclusive results for centrality and coreness as well as negative clustering. Even though these results appear to suggest that organizations labelled as private do not play a strategic role in this social policy network, the more detailed findings shown in Table 3 indicate that their importance depends on the type of link.

The results presented in Table 3 indicate the organizational determinants of network position by type of the interaction. The collaborative interactions identified are: sharing information, infrastructures, and collaborating in social projects. As hypothesized in H4, results indicate that the determinants of network position vary by type of link. Whilst there is a positive and significant association between being a private organization and having a more central position both in sharing infrastructures and project collaboration networks, private organizations are significantly and negatively linked with centrality in information networks. This might be because private organizations are fewer in number, operate independently and are therefore more likely to be isolated from public policy networks. It may also indicate less involvement of non-state actors in information networks that are mobilized by publicly-funded lead-organizations.

Three types of organizations are positively and significantly associated with more central and core positions in all three types of networks. Those are lead-organizations (SOCAT), actors providing social care services as well as those devoted to social policy promotion. These results confirm the high relevance of organizations devoted to these activities in all collaborative interactions.

Education organizations have higher centrality and coreness in infrastructure sharing and project collaboration networks. With the exception of coreness (marginally significant), the results for centrality and clustering in information sharing networks are not significant. The results for those organizations providing health services are similar, revealing that education and health organizations are important in the former two interactions whilst playing marginal roles in the diffusion of information. These results support other findings in organizational literature where organizations with narrower mandates generally perform worse as networkers; however, this study adds to these results that worse network performance depends on the type of link established. Findings suggest that organizations with more specialized missions perform better in more formal subnetworks with more intense links. Finally, culture and sports organizations have less central positions in information sharing networks relative to the 'others' category, playing a more trivial role in those networks. In summary, the results presented in Table 3 show more nuanced descriptions of the roles that different organizations play by distinguishing between different types of connection, which has implications on the other hypothesized results (H2 and H3).

Discussion and conclusion

The implementation of particular public policies requires a coordinated intervention of networks of organizations specialized in different sectors (Lecy et al., 2014; O'Toole, 1997). In these diverse networks, organizations reveal different forms of interaction and participation in the design and implementation of public policies. In this regard, the article makes a novel contribution to the literature suggesting that the relative importance of organizations in networks is determined by organizational attributes and, therefore, that specific types of organizations might be better suited to a particular role in a network. The findings also suggest that the relative importance of different types of organizations varies depending on the form of interaction considered, highlighting the need to better understand the complexity of policy networks.

This article argues that the level and nature of the involvement of different types of organizations, particularly in publicly mobilized networks, affects network configuration and is therefore relevant for policy implementation strategies. Given that organizational characteristics have been found to determine the relative importance of these organizations in public administration networks, these aspects should be considered when the networks are being mobilized. For example, whilst independent, privately funded organizations are likely to play a more central role than publicly funded institutions in sharing infrastructures and project collaboration networks, the stronger links with agreed objectives, their relative importance in information exchange networks is lower. However, this might be a consequence of the network being publicly mobilized as the lead-organizations in charge of the mobilization of the network do play a key role in the global network as well as in the three subnetworks studied. This interpretation is consistent with previous literature regarding the relevance of public funding agencies for interorganizational network configuration (Graddy & Chen, 2006). Finally, organizations in the education sector, those providing health and social care services, and those in charge of social policy promotion were found, in general, to be better connected and to belong to large cores in the network. Therefore, compared to

others, they seem to play a more influential and participative role in Uruguayan social policy networks. These results corroborate those in the literature regarding the higher influence of organizations with more general remits of activity (Dyer & Singh, 1998).

Distinguishing subnetworks with different types of ties is crucial when trying to understand the role of the different organizations in a particular network because it reveals which organizations are driving the implementation of the policy. In this particular case, the results related to the information exchange subnetwork are especially important for public administrators as this is one of the main objectives of the SOCAT policy. For example, the findings show that organizations with narrow mandates such as health and education play a key role in social policy networks by collaborating in projects and sharing infrastructures, while they are not necessarily important for information diffusion policies. These findings are consistent with those of Provan and Huang (2012), who argue that policy networks largely depend on the type of resource being considered in the links. This could also guide public administrators when developing and promoting networks to involve a particular type of actor and also policymakers as to which types of ties are more aligned with the implementation of a particular policy. Exploring subnetworks is equally useful for managers of social policy organizations as this can help guide their decision making in terms of network participation and which types of ties they might want to concentrate on in order to reach their objectives.

However, this study has limitations. Firstly, the nature of this dataset, collected to evaluate a public program aiming to create links across social policy actors, might imply potential biases. Results highlight the important and central role that the organizations directly involved in implementing the Ministerial policy have in social policy networks but the influence of these lead-organizations in the network might have been overstated. Aiming to mitigate this, the regressions included SOCAT organizations as a variable. Global networks have been inferred from the ego networks of these organizations, and whilst this does not compromise results validity (Smith et al., 2017), it does imply that other organizations will necessarily play more peripheral roles. In addition to this methodological point, these organizations had a special incentive to demonstrate that they played a central and important role in the neighborhood networks as this is part of their mandate/mission and directly connected with the objectives of the impact evaluation. This bias might have been particularly serious in the information exchange networks as this was the primary objective of this specific policy. Furthermore, even though the organizational form and its direct relationship with the Ministry have been controlled for, the data does not allow observing the differences between ties formed due to organizational mandates and other links created independently by the organizations. The study would have benefited from further qualitative analysis exploring the motivations behind the interorganizational links being established.

Secondly, introducing more traditional organizational characteristics such as age, size and budget of the organizations was not possible because these data were not available. This opens an avenue for further research on which actors are more likely to have higher influence on the configuration of publicly driven social policy networks. The use of advanced multilevel analysis for social networks might be useful to expand knowledge in this area.

This study has implications for both further research and policy implementation. First, future research on policy networks, in particular network effectiveness evaluations, may benefit from considering the characteristics of actors as determinants for the role they play on social policy networks. Also, exploring subnetworks is required to reveal the complexity of the global network and provide a full and comprehensive picture of the existing interactions. Finally, based on the findings, considering the characteristics of the organizations in a network can contribute to design and articulate more effective social policy implementation strategies.

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Appendices

Appendix A

The following relational questions were included in the questionnaire:

- With which organisations do you currently participate in a project (i.e. joint activity with shared responsibility and objectives), in the geographic area of intervention of your organisation?
- Which organisations do you contact in order to obtain information or make an inquiry in relation to your organisation's regular activities?
- With which organisations do you share infrastructures or equipment (for example buildings and facilities, transport, equipment, or others)?

Appendix B. Descriptive Statistics – Network Measures

Type of link Variables	All	Sharing information	Sharing infrastructures	Project collaboration
Degree	0.24 (0.27)	0.10 (0.12)	0.05 (0.08)	0.09 (0.12)
Clustering coefficient	0.32 (0.34)	0.23 (0.33)	0.05 (0.16)	0.19 (0.30)
Coreness	5.29 (3.63)	2.19 (1.52)	1.21 (1.39)	2.04 (1.92)
Number of observations	669	669	669	669

†Standard deviations are in parentheses.
‡The degree measure has been normalized to account for network size.

Appendix C. Descriptive Statistics – Explanatory variables

Variables	Observations (number)	Total
Private	669	0.13 (0.33)
SOCAT	669	0.07 (0.26)
Education services provider	669	0.28 (0.45)
Health services provider	669	0.12 (0.32)
Care services provider	669	0.09 (0.28)
Culture/Sports organisations	669	0.03 (0.18)
Gender/Violence organisations	669	0.03 (0.16)
Social policy promotion organisations	669	0.20 (0.40)
Other organisations	669	0.18 (0.39)

†Standard deviations are in parentheses.